



Agency for Toxic Substances &amp; Disease Registry

219081



## ToxFAQs™ for Trichloroethylene (TCE)

*(Tricloroetileno)*

July 2003

CAS#: 79-01-6

**PDF Version, 45 KB**

**This fact sheet answers the most frequently asked health questions about trichloroethylene. For more information, you may call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.**

## Highlights

Trichloroethylene is a colorless liquid which is used as a solvent for cleaning metal parts. Drinking or breathing high levels of trichloroethylene may cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death. Trichloroethylene has been found in at least 852 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

## What is trichloroethylene?

Trichloroethylene (TCE) is a nonflammable, colorless liquid with a somewhat sweet odor and a sweet, burning taste. It is used mainly as a solvent to remove grease from metal parts, but it is also an ingredient in adhesives, paint removers, typewriter correction fluids, and spot removers.

Trichloroethylene is not thought to occur naturally in the environment. However, it has been found in underground water sources and many surface waters as a result of the manufacture, use, and disposal of the chemical.

## What happens to trichloroethylene when it enters the environment?

- Trichloroethylene dissolves a little in water, but it can remain in ground water for a long time.
- Trichloroethylene quickly evaporates from surface water, so it is commonly found as a vapor in the air.
- Trichloroethylene evaporates less easily from the soil than from surface water. It may stick to particles and remain for a long time.
- Trichloroethylene may stick to particles in water, which will cause it to eventually settle to the bottom sediment.

- Trichloroethylene does not build up significantly in plants and animals.

---

## How might I be exposed to trichloroethylene?

- Breathing air in and around the home which has been contaminated with trichloroethylene vapors from shower water or household products such as spot removers and typewriter correction fluid.
- Drinking, swimming, or showering in water that has been contaminated with trichloroethylene.
- Contact with soil contaminated with trichloroethylene, such as near a hazardous waste site.
- Contact with the skin or breathing contaminated air while manufacturing trichloroethylene or using it at work to wash paint or grease from skin or equipment.

---

## How can trichloroethylene affect my health?

Breathing small amounts may cause headaches, lung irritation, dizziness, poor coordination, and difficulty concentrating.

Breathing large amounts of trichloroethylene may cause impaired heart function, unconsciousness, and death. Breathing it for long periods may cause nerve, kidney, and liver damage.

Drinking large amounts of trichloroethylene may cause nausea, liver damage, unconsciousness, impaired heart function, or death.

Drinking small amounts of trichloroethylene for long periods may cause liver and kidney damage, impaired immune system function, and impaired fetal development in pregnant women, although the extent of some of these effects is not yet clear.

Skin contact with trichloroethylene for short periods may cause skin rashes.

---

## How likely is trichloroethylene to cause cancer?

Some studies with mice and rats have suggested that high levels of trichloroethylene may cause liver, kidney, or lung cancer. Some studies of people exposed over long periods to high levels of trichloroethylene in drinking water or in workplace air have found evidence of increased cancer. Although, there are some concerns about the studies of people who were exposed to trichloroethylene, some of the effects found in people were similar to effects in animals.

In its 9th Report on Carcinogens, the National Toxicology Program (NTP) determined that trichloroethylene is "reasonably anticipated to be a human carcinogen." The International Agency for Research on Cancer (IARC) has determined that trichloroethylene is "probably carcinogenic to humans."

---

## Is there a medical test to show whether I've been exposed to trichloroethylene?

If you have recently been exposed to trichloroethylene, it can be detected in your breath, blood, or urine. The breath test, if it is performed soon after exposure, can tell if you have been

exposed to even a small amount of trichloroethylene.

Exposure to larger amounts is assessed by blood and urine tests, which can detect trichloroethylene and many of its breakdown products for up to a week after exposure. However, exposure to other similar chemicals can produce the same breakdown products, so their detection is not absolute proof of exposure to trichloroethylene. This test isn't available at most doctors' offices, but can be done at special laboratories that have the right equipment.

---

## Has the federal government made recommendations to protect human health?

The EPA has set a maximum contaminant level for trichloroethylene in drinking water at 0.005 milligrams per liter (0.005 mg/L) or 5 parts of TCE per billion parts water.

The EPA has also developed regulations for the handling and disposal of trichloroethylene.

The Occupational Safety and Health Administration (OSHA) has set an exposure limit of 100 parts of trichloroethylene per million parts of air (100 ppm) for an 8-hour workday, 40-hour workweek.

---

## Glossary

**Carcinogenicity:** The ability of a substance to cause cancer.

**CAS:** Chemical Abstracts Service.

**Evaporate:** To change into a vapor or gas.

**Milligram (mg):** One thousandth of a gram.

**Nonflammable:** Will not burn.

**ppm:** Parts per million.

**Sediment:** Mud and debris that have settled to the bottom of a body of water.

**Solvent:** A chemical that dissolves other substances.

---

## References

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological Profile for Trichloroethylene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

---

## Where can I get more information?

If you have questions or concerns, please contact your community or state health or environmental quality department or:

### **For more information, contact:**

Agency for Toxic Substances and Disease Registry  
Division of Toxicology and Environmental Medicine  
1600 Clifton Road NE, Mailstop F-62

Atlanta, GA 30333  
Phone: 1-800-CDC-INFO · 888-232-6348 (TTY)  
Fax: 1-770-488-4178  
Email: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)

ATSDR can also tell you the location of occupational and environmental health clinics. These clinics specialize in recognizing, evaluating, and treating illnesses resulting from exposure to hazardous substances.

**Information line and technical assistance:**

Phone: 888-422-8737  
FAX: (770)-488-4178

**To order toxicological profiles, contact:**

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161  
Phone: 800-553-6847 or 703-605-6000

**Disclaimer**

All ATSDR Toxicological Profile, Public Health Statement and ToxFAQs PDF files are electronic conversions from paper copy or other electronic ASCII text files. This conversion may have resulted in character translation or format errors. Users are referred to the original paper copy of the toxicological profile for the official text, figures, and tables. Original paper copies can be obtained via the directions on the [toxicological profile home page](#), which also contains other important information about the profiles.

- Page last reviewed: March 3, 2011
- Page last updated: March 3, 2011
- Content source: [Agency for Toxic Substances and Disease Registry](#)

---

Agency for Toxic Substances and Disease Registry, 4770 Buford Hwy NE,  
Atlanta, GA 30341  
Contact CDC: 800-232-4636 / TTY: 888-232-6348

